



AG IN THE CLASSROOM - HELPING THE NEXT GENERATION UNDERSTAND THEIR CONNECTION TO AGRICULTURE

# Agriculture is Everywhere

## HOW THE COLORADO DEPARTMENT OF AGRICULTURE SERVES YOU

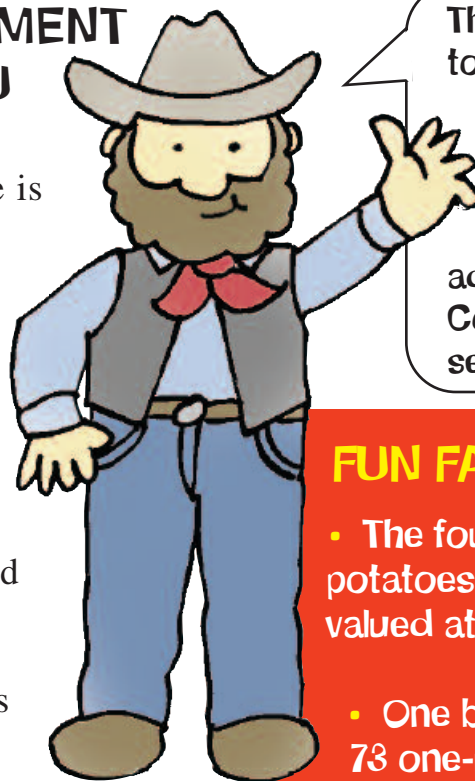
Look around and, chances are, you're surrounded by agriculture because "Agriculture is Everywhere!"

Agriculture is about more than the food you eat, it can be found in the clothes you wear, the vehicle your parents drive and even your crayons. Colorado farms and ranches also create scenic landscapes and provide habitat for most of the wildlife in our state.

Nearly half of the state is made up of farms and ranches. Colorado's 30,700 farms and ranches generate over \$16 billion in economic activity and create over 100,000 jobs.

The Colorado Department of Agriculture has a pretty big job making sure many agriculture and consumer laws passed by our legislature are carried out. The department works to strengthen and improve Colorado's agriculture industry. It makes sure we have a safe, high quality and sustainable food supply. It also works to protect consumers, the environment and our natural resources like water and soil. The Colorado Department of Agriculture is just one of 19 departments in our state's government.

You can travel around the globe to discover ways agriculture is a part of your everyday life, and see how the Colorado Department of Agriculture serves the state.



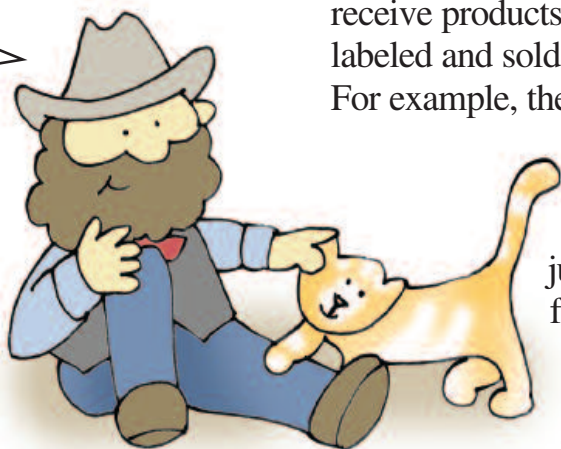
The Colorado Department of Agriculture strives to better the lives of those who are involved in agriculture. Many people don't realize that you needn't be a farmer or rancher to benefit from the resources this Department provides. If you've ever bought groceries, adopted a dog or fertilized your lawn, the Colorado Department of Agriculture has served you.

## FUN FACTS

- The four leading crops in Colorado are hay, corn, potatoes and wheat. In 2006, these crops were valued at \$1.4 billion.
- One bushel of wheat will produce around 73 one-pound loaves of bread. In 2007, Colorado produced about 90 million bushels of wheat.
- Colorado ranks first in the nation in production of proso millet. This grain is used as cattle feed and bird seed.
- Peaches are Colorado's leading fruit crop. In 2006, 14,000 tons of peaches were grown in this state.
- Colorado has 2.7 million head of cattle, making it the state's number one agriculture product.

# Agriculture in Your Home

My name is Howdy and I'm your agriculture tour guide. Today's tour will begin in your very own home and include exciting stops across Colorado and around the world because "Agriculture is Everywhere!"



receive products that are safe, properly labeled and sold in an honest manner. For example, the Colorado Feed Law requires pet foods to be labeled with certain information, just like on your favorite breakfast cereal box. This law ensures that pet owners have all the information they need to choose the right food to keep their pet healthy.

It is the job of the Inspection & Consumer Services Division to inspect:

- animal feed
- fertilizer
- eggs
- grain storage buildings
- people buying and selling agricultural products
- custom meat and wild game processors
- door to door food sales companies
- weighing and measuring devices
- packages for correct weight and pricing

Let's take a look at the following cat food label and then answer the questions that follow.

## **GUARANTEED ANALYSIS:**

Crude Protein (Min) . . .30.0%	Moisture (Max) . . . . .12.0%
Crude Fat (Min) . . . . .8.0%	Calcum (Ca) (Min) . . .12.0%
Crude Fiber (Max) . . . . .4.5%	Phosphorus (P) Mind) .0.8%

**INGREDIENTS:** Ground yellow corn, corn gluten meal, meat and bone meal, soybean meal, animal fat preserved with mixed-tocopherols (form of Vitamin E), chicken by-product meal, turkey by-product meal, animal liver flavor, phosphoric acid, salmon meal,

**Manufactured by:** Bob's Cat Food Company, Denver, CO USA

Bob's Cat Food is formulated to meet the nutritional levels established by the AAFCO Cat Food Nutrient Profiles for all life stages.

What percent (%) crude protein does the cat food contain? \_\_\_\_\_

What Vitamin is tocopherol a form of?\_\_\_\_\_

Ingredients are always listed from most to least. What is the main ingredient of this cat food?  
\_\_\_\_\_

## **COLORADO CONTENT STANDARDS COVERED IN THIS READER:**

### **ECONOMICS**

**Standard II** - Students understand how different economic systems impact decisions about the use of resources, and the production and distribution of goods and services.

**Standard III** - Students understand the results of trade, exchange and interdependence among individuals, households, businesses, governments and societies.

### **MATH**

**Standard V** - Students will use a variety of tools, and techniques to make and use measurement in problems related to everyday situations.

**Standard VI** - Students will understand, develop, and use computational skills and techniques, including estimation, mental math, paper and pencil, calculators and computers to solve situations.

### **READING AND WRITING**

**Standard I** - Students read, listen to, and understand a variety of materials.

**Standard IV** - Students apply thinking skills to their reading, writing, speaking, listening and viewing.

**Standard V** - Students read to locate, select, and make use of relevant information from a variety of media, reference and technological sources.

### **SCIENCE**

**Standard III** - Life Science: Students know and understand the characteristics, and structure of living things, the processes of life, and how living things interact with each other and their environment.

**Standard V** - Students know and understand interrelationships among science, technology and human activity, and how they can affect the world.



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# Agriculture and Shopping



The food you buy at the store comes from farms and ranches. Now let's head to the stores where your family shops to find out what the Department of Agriculture does there.

Agriculture, weights and measures go together. In fact, the Department of Agriculture enforces the Colorado Weights & Measures Law.

Department inspectors regularly certify scales, check packages and check prices all over the state to make sure you get what the packages say you should.

## Scales

Did you know that when you go to the grocery store to buy apples, the cashier weighs them on a scale that has been tested by the Department of Agriculture? Scales are used at the grocery stores to weigh fruit, vegetables, meat and other food. Department inspectors test these scales by putting very accurate weights on them to make sure that they are weighing correctly. The store must fix any scale that is not accurate. When you shop, look for the round red and white approval seal on scales.



The scales checked by the Department of Agriculture can also be very big. In fact, when you turn on a light, the energy that lights up your room might come from coal burned in a power plant. The coal is weighed before the power plant uses it. The scale they used was probably checked by the Department of Agriculture. Instead of weighing up to 30 pounds such as a grocery store scale, that scale may weigh up to 400,000 pounds at a time!

## Packages

These days, almost everything you buy is in some type of package. The Department of Agriculture makes sure that the package label is truthful. This means if you pay for five pounds of sugar, you get five pounds of sugar. Customers also need to know what is in the package and who packaged it. The law requires that the product name, weight, and packer's name and address be listed on the label.

## Scan Testing

Did you know that the Department of Agriculture has inspectors who go into the same stores as you do? They make sure that you pay the correct price. Most items you see in a store will

have a bar code. When it is scanned at the cash register it will tell what the item costs. Inspectors check for correct prices by using a hand-held scanning gun. The price read by the gun must match what is listed on the store's shelf tag. The inspectors do this test throughout the whole store. The results tell them whether the store priced the items correctly.



Department of Agriculture Weights & Measures inspectors are in stores every day to make sure that you can count on accurate scales, truthful packages and correct pricing!

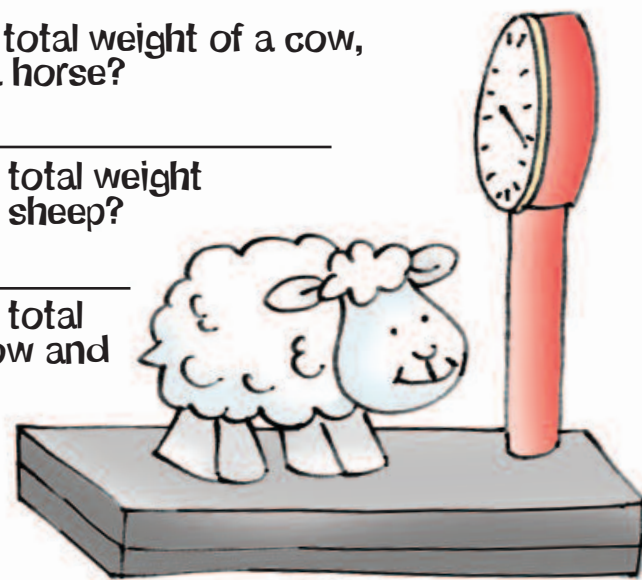
The chart below lists some of the weights of average farm animals. Use these measurements to solve the problems below the chart.

cow	1300 lbs.
pig	800 lbs.
sheep	150 lbs.
horse	1200 lbs.

1. What is the total weight of a cow, a sheep and a horse?

2. What is the total weight of a pig and a sheep?

3. What is the total weight of a cow and a horse?



## FUN FACTS

- Colorado Department of Agriculture staff inspects about 2 billion pounds of fruits and vegetables annually. If shipped in containers, those containers would stretch 300 miles or from Grand Junction to Burlington, Colorado.

# AGRICULTURE'S LITTLE PESTS



You just have to step outside for the next leg of our tour. Or should I say six legs of the tour? You've seen bugs all your life but have you ever wondered about how they affect the world around you? Bugs may be little but they can cause big problems.

Bugs are a part of every eco-system. Many are good for the environment. Others can have terrible impacts on the world around us. Some

bugs leave their home and go to places that aren't native to them and this can cause big problems. The Cooperative Agricultural Pest Survey (CAPS) tries to find these plant pests before they cause problems – especially insects that threaten Colorado's agriculture and natural habitats. CAPS is part of the Plant Industry Division of the Colorado Department of Agriculture.

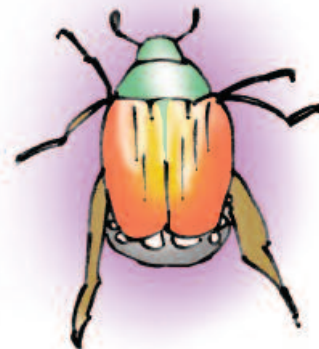
The Asian longhorned beetle is a very destructive pest - especially to maple trees. The insect came to North America about 20 years ago from China. It is also called the starry sky beetle because it is very black with bright white spots. It looks kind of like a star-filled night sky.



It is called a longhorned beetle because its antennae are longer than its whole body. The adult insect is very big, about a full inch long. The larvae (babies) eat the wood in the trunk of the tree and burrow throughout the entire trunk. That is how this insect can kill so many trees.

This insect is very damaging even in its homeland of China. A lot of times, insects that come to this country and become severe pests are not damaging in their homeland because other insects and diseases keep them in check. That is not the case with this insect.

Another dangerous bug has already been seen in this state - the Japanese beetle. The adult is about 1/2" long and 1/4" wide. The beetle left his home country of Japan and traveled to the United States; a few have even made their way to Colorado.



This little bug may look harmless but it poses a serious threat. The Japanese beetle eats grass and over 300 different plants, shrubs and trees.

Many of these bugs come to North America accidentally, maybe by cargo plane or ship. But, once they are here, it is important to keep them from spreading across the country.

The CAPS program monitors bad bugs by setting traps around the state. If the traps capture any of these bugs, a plan is put into place to remove them. While many bugs are native to Colorado and good for the environment, it is important to find and respond to pests that can harm Colorado's eco-system.

**What did the ladybug say to the grass hopper?** Find all the words from the word bank in the word search below. When you finish, the first 13 letters that are left over will spell the answer.

A	S	N	T	T	O	P	E	B	S	U	D	G	D	L
E	N	A	G	I	N	L	N	P	G	E	M	E	E	A
L	I	T	W	U	P	E	A	T	S	F	N	V	I	R
T	G	I	E	A	U	R	M	T	I	R	G	H	R	V
E	W	V	M	N	T	I	R	N	O	C	H	I	N	A
E	F	E	M	W	N	U	G	H	O	Y	A	H	G	E
B	N	S	D	H	C	A	G	B	A	R	K	X	H	L
S	E	E	R	T	R	N	E	T	A	T	I	B	A	H
J	X	W	I	J	O	T	N	A	L	P	T	V	C	O
X	O	V	M	L	O	M	Z	X	C	X	S	E	N	H
J	E	J	G	T	T	C	G	U	Y	I	E	C	O	E
E	C	O	S	Y	S	T	E	M	U	N	P	O	J	H

## WORD BANK

antennae  
bark  
beetle

China  
destructive  
ecosystem  
environment  
habitat

larvae  
longhorned  
maple  
native  
pest

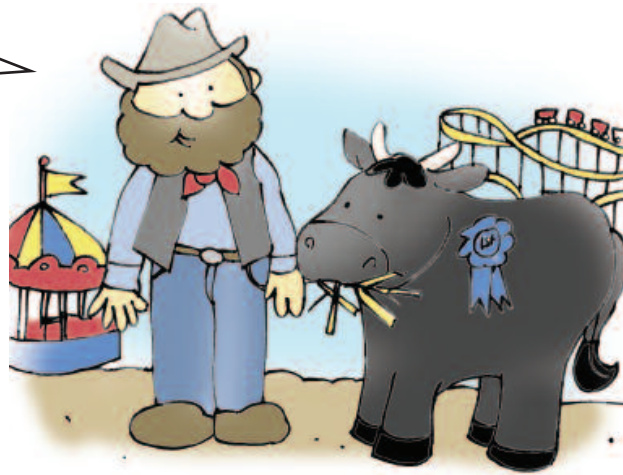
plant  
roots  
traps  
trees

**Answer:** \_\_\_\_\_!



# Agriculture and the Colorado State Fair

Hold on to your hats. The next stop on our agriculture tour is the wonderful world of friendly competition, carnival rides, cotton candy, and rodeos. We're now going to sunny Pueblo, Colorado. Pueblo is located in the southeast part of the state. It's the home of the Colorado State Fairgrounds, which is where family fun and education come together for a thrilling summer event.



owners today. Contestants are put to the test during such events as saddle bronc riding, team roping and barrel racing.

- General Entry competitions

make us think back to the days of family quilts and home-made jellies. Each year, 8,000 general entry projects are judged at the Fair, including everything from doll making, flowers, and cooking to baking pies. General entry also includes field crop and horticulture judging. An easy way to tell these two categories apart is by these simple definitions:

- Field crops are mostly eaten by animals. Some examples include hay, corn, oats, barley, alfalfa, clover, sorghum and wheat.
- Horticulture consists of those items eaten by people like onions,

potatoes, cantaloupe, tomatoes, carrots, beets, garlic, beans, cucumbers, squash, pumpkin, peppers, cabbage and broccoli.

- Fiesta Day is a celebration of Hispanic culture, an important part of Colorado's history.
- The Colorado State Fair plays host to a variety of special attractions including exotic animals. While it may seem like tigers, bears, and stingrays aren't agriculture, they each play an important role. Making sure our citizens are educated on a variety of animals and how to protect them is one of the goals of the State Fair.

Throughout the years, the Colorado State Fair has grown in size and popularity. Today, nearly half a million people come for the eleven-day fair. It has become the centerpiece of summer fun in Colorado youth and agriculture. What is even more amazing is that the first Colorado State Fair was held in 1869 and Colorado has only been a state since 1876. This means the Colorado State Fair is older than the state itself!

The Colorado State Fair is the largest summer event in Colorado. It is the showcase for Colorado's agriculture industry. It is filled with one of the top carnivals in the country, amazing art and famous musicians. The Colorado State Fair highlights agriculture, crops, livestock, canning, baking, needlework, flowers, art, science and education. The Fair is dedicated to educating folks about the importance of agriculture to the state and the world.

What can you see at the State Fair and how does it connect to agriculture?

- Livestock shows give you a first-hand look at some of the animals found on Colorado's farms and ranches. About 7,500 animals can be found at the Fair, including cattle, sheep, hogs, horses, goats, rabbits and poultry. Youth from across the state compete in various livestock and agriculture contests.
- Rodeos are a look into Colorado's past and are a popular extreme sport today. Rodeo events are based on skills developed by cowboys and cowgirls in the Old West. Many of these skills are still used by livestock



There were 25 entries in the pie competition at the State Fair. Five types of pies were represented. Read the clues to help Sadie figure out how many of each type of pie was in the competition.

1. Cherry pies outnumbered peach pies by 5 to 1.
2. There were twice as many apple pies as cherry pies.
3. The number of blueberry pies compared to rhubarb pies was a ratio of 2 to 1.
4. The total number of blueberry, rhubarb and peach pies was the same as the number of apple pies.

\_\_\_\_\_ cherry pies  
\_\_\_\_\_ peach pies  
\_\_\_\_\_ apple pies  
\_\_\_\_\_ blueberry pies  
\_\_\_\_\_ rhubarb pies

# Agriculture and the Brand Inspector

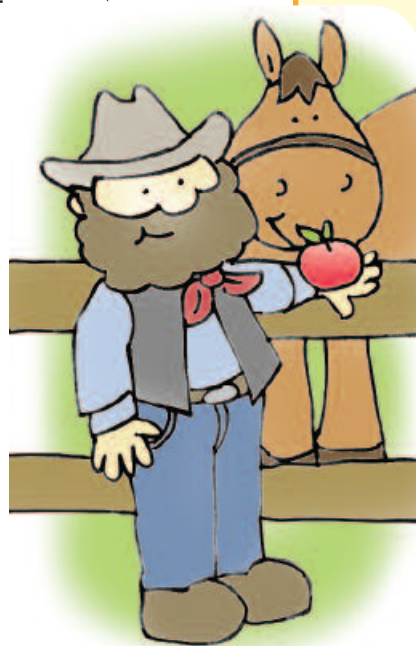
As you walk around the Colorado State Fair, you'll see a lot of animals. There is a group of folks who work everyday to protect them. They are Brand Inspectors. The next 3 steps of our tour goes statewide as we find out how the Department of Agriculture protects Colorado's livestock industry and the environment.

Brand inspectors are modern-day cowboys and cowgirls. They may have traded their favorite horse for a pick-up and their rope for a radio, but their mission has remained the same. It is to protect Colorado's livestock industry by making sure animals aren't lost or stolen.




A brand inspector examines cattle, horses, mules, burros, elk and deer before they are sold or transported. The inspector looks at each animal to make sure who owns it. They do this by looking at the animal's brand.

What is a brand? A brand is an animal's return address. It helps identify who owns the animal and where they live. In Colorado, brands are usually placed on the animal's left hip, right hip, ribs, or shoulders. Brands are easy to read: symbols are read from left to right, from top to bottom, outside to inside.

Colorado's team of brand inspectors oversees more than 37,000 unique livestock brands. They travel across the state to perform their inspections. Together, they can travel more than 1.4 million miles and inspect approximately 4.2 million head of livestock each year. That is more animals than there are people in the entire state!



## BE A BRAND INSPECTOR

Use your own initials and design a brand for yourself. Then figure out what to call it. Brands can be made up of any letter of the alphabet or number. The letters or numbers can be alone or together. In addition, some symbols can be used including a slash, circle, half circle, cross, or bar. If a letter is turned on its side, it's called "lazy." Example: =lazy K. A letter that starts or ends with a horizontal line is called "flying." Example: =flying K. A letter set on top of a quarter circle is called "rocking." Example: =rocking K.

## Agriculture and Animals

The Colorado Department of Agriculture's Animal Industry Division also protects our livestock industry and pets. This team of dedicated veterinarians and employees keep Colorado's animals safe and healthy.

Just like your parents want to raise healthy children, farmers and ranchers want to raise healthy animals. Your parents make sure you have a safe, warm and dry place to live, that you eat good food, drink clean water and get plenty of rest. They also try to keep you from being exposed to kids who might have a sickness you could catch, like colds or the flu. If you get sick, your parents take you to the doctor.

Farmers, ranchers and pet care facilities provide shelter, good nutrition and clean water for their animals. They work to make sure that their animals are not exposed to sick animals. If an animal gets sick, they call a veterinarian (animal doctor). And if it's a serious disease, that could spread quickly to neighboring farms and ranches, the local veterinarian calls the state veterinarian at the Colorado Department of Agriculture. Everyone works together to make sure other animals are not exposed and that the problem is taken care of as soon as possible.

The men and women who work in the Animal Industry Division are trained to help raise healthy animals. They also work with the United

*continued on page 7*



States Department of Agriculture (USDA) to track animal diseases across the U.S.

When animals come into Colorado or travel around the state, they must be inspected to make sure they are healthy and disease-free. Veterinarians then give the owners health certificates that state that the animals are healthy. Colorado is proud that it has been free of many serious livestock diseases for decades.

Healthy and safe animals are important to lots of people throughout the state because Colorado's livestock industry generates more than \$4 billion a year. This industry includes ranches, dairies, cattle feeding operations and retail stores.

Increasing movement of livestock and people means that today farmers, ranchers, the Colorado Department of Agriculture and USDA must take an active roll to prevent and treat livestock diseases. Healthy livestock means healthy food products and a satisfied customer—you.

## FUN FACTS

- The oldest state-registered brand on record with the Colorado Department of Agriculture's brand board is from 1899.
- There are only 17 states in the United States, including Colorado, that have brand inspection laws.

# Protecting the Environment

The Conservation Services Division of the Colorado Department of Agriculture works with public and private landowners across the state to improve the stewardship of natural resources. Its programs work to prevent soil erosion, improve irrigation systems and to manage noxious weeds.

For example, use of fertilizers and pesticides improves farm production but can contaminate groundwater. Ground water is large areas of water stored underground. The Department of Agriculture monitors ground water to prevent agricultural chemicals from contaminating it. Ground water is important because much of the water used in homes across the state comes from ground water sources.

Individual actions on the farm, in the backyard and on open spaces can impact neighboring landowners and the community. Applying pesticides incorrectly can harm crops, water quality and public health. Allowing noxious weeds to spread harms crops, wildlife habitat and recreational areas. Poor land management can permanently degrade the sustainable use of natural resources necessary for clean water, agricultural productivity and abundant wildlife.

## How Well Did You Read?

Who does a farmer or rancher call when they have a sick animal?

Who gets called if there is a serious disease that could affect other farms and ranches?

How much money does the livestock industry in Colorado create?

What does a veterinarian give to owners when animals are moved a certain distance within Colorado?



# Colorado Agriculture is Global

We've now traveled across the state but our tour doesn't end here. In fact, get ready to fly around the world.

Colorado's food and agricultural products are known worldwide for their quality. In fact, Colorado products such as beef, wheat, dry beans and cheese were purchased by customers in nearly 100 countries in 2007. Canada, China, Japan, Korea, Mexico and Taiwan are some of these countries. The Markets Division of the Colorado Department of Agriculture assists Colorado food and agricultural companies to sell their products in local (Colorado Proud), regional, national and international markets.

Exports are products that are shipped to other countries from Colorado. Exports have increased by 80% in the last ten years. Today, Mexico and Canada are our largest customers and combined, they purchase two-thirds of our total food and agricultural exports. The North American Free Trade Agreement (NAFTA) helps regulate trade between Canada, Mexico and the U.S.

It is important because it gave consumers in all three countries a wider range of food and agricultural products. For example, Colorado farmers are not able to supply our supermarkets with cabbage, lettuce, or spinach during the winter months. Because of NAFTA we are able to import those products from Mexico at

a lower cost to consumers. But during the summer months when our farmers do have these and other products like onions and potatoes, they can sell them here in Colorado and in markets in Mexico.

Most of our exports are transported to Mexico and Canada by truck and railroad. Exports to other parts of the world are put on large container ships. Last year, Colorado farmers sold more than 1,100 truck loads of potatoes to Mexico – that's more than 55 million pounds. Lined up end-to-end, those trucks would stretch about 12 miles!

The Colorado Department of Agriculture's fruit and vegetable inspectors make sure the fruits and vegetables meets tough quality guidelines before they are shipped. The

inspection service provides information on the size, quality, and condition of fruits and vegetables using USDA standards.

The next time your family is traveling outside the United States you could be eating something that's grown or processed right here in your home state! Agriculture is an amazing and important part of your everyday life. I sure hope you enjoyed today's tour. Colorado agriculture can be found in your home and around the world because "Agriculture is Everywhere!" Happy Trails!



## FUN FACTS

- Sunflower and millet are the two most common seeds used in wild bird food.
- One bushel of corn can help produce approximately 2.8 gallons of ethanol (fuel for vehicles). In 2007, Colorado corn growers harvested about 140 million bushels.
- If one sandwich was eaten for breakfast, lunch and dinner everyday, it would take 168 days to eat the amount of bread produced from one bushel of wheat.
- One bushel of corn will sweeten more than 400 cans of pop.
- It takes about 1.4 gallons of milk to make 1 gallon of ice cream.
- In 2006, 2.5 million tons of feed for animals was sold in Colorado.

## Colorado Proud

Better for you. Better for Colorado. Look for the Colorado Proud logo at grocery stores, farmers' markets, garden centers and restaurants. By buying locally grown, raised and processed food and agricultural products, you are receiving high quality fresh products and helping Colorado's economy, local farmers, ranchers, greenhouses, manufacturers and processors.

